10 A

Jounce Bumper Brkt Welds:	OK
Ball Stud:	Seated Push out B/P Spec 2000 # Min. Push out 3800 # and still seated
Lower Control Arm Stamping: Date: SKD 2345	OK

Summary: The L.H. lower control arm stampings from SKD appear to have a small radius at the transition of the side wall to the ball stud nose. SKD has changed the trim to increase the radius to one inch and provide additional strength in the ball stud area.

D. H. Pokriefka
Chief Inspector

cc: R.M. Brown

000201

11

G-30 L/C/A HISTORY
(P/N 14026585 L/C/A ASM AS SERVICED)

07AUG7 8:25 EARL GAUTSCHE - FLEET SERVICE CAC 8-562-6533

- G-30 CUTAWAYS - (18 ABS) SCHOOL BUSSES, 6.2 L DIESELS
- * • 13 L/C/A ASM CRACKED IN BALL JOINT AREA (LH) ONLY (P/N 14026585 SERVICED ASM)
- * • 45 BUSES IN FLEET (TYPICAL VIN # 2GBHG31J1G9101766)
- OCCURANCES AT APPRX 50,000 + MILES
- BUSSES MADE BY CARPENTER (BODY WORKS)
- (SAN DIEGO CITY SCHOOLS
  MAINTENANCE DEPT.
  2351 CARDINAL LANE
  SAN DIEGO, CALIF 92123
  ATTN: DAN HARGREAVES (MAINT. MGR.) (619) 278-7490)
- PHOTOS PROVIDED (POOR)
- STATE HIGHWAY PATROL AND D.O.T. INVOLVED

07AUG7 2:26 DAN HARGREAVES - (MAINT. MGR,

- FRT SUSP TAGS ON (2) VEHICLES VERIFIED AS: SAP 15597838
- * • 9 L/C/A ASM CRACKED CHANGED 7 (DIFFERS FROM E. GAUTSCHE)
- HELWIG TRANSVERSE LEAF SPRING ADDED (BY HIMSELF) DUE TO: TIRES WEARING OUT AT 3000 MILES (RADIAL TIRES) - IDLER ARMS WEARING OUT AT 3-4000 MILES
- * • 33 BUSSES IN FLEET (DIFFERS FROM E. GAUTSCHE)
- TOLD BY THOMAS BUS COMPANY (COMPETITOR TO CARPENTER) THAT THE CHASSIS USED IS ONLY 8600 # GVW.
- CARPENTER MAINTAINS THAT VEHICLE IS RATED AT 10,000 GVW.

10AUG7 8:05 GENE STURM - T&B CHASSIS DESIGN ENGR - 8-292-3108

- MUST SEND IDENTICAL REPLACEMENT L/C/A ASM. (NOT THOSE REINFORCED FOR F-92 HEAVY DUTY OPTION)
- NO EVIDENCE TO SUPPORT A NEED FOR HEAVY DUTY ARMS OR CROSS MEMBER. PARTS MADE TO PRINT MEET ALL SCHEDULE REQUIREMENTS.
- 3RD PROBLEM IS DUE TO IMPROPER TRANSITION RADIUS AT THE BALL JOINT (REF. TIR. # T-87G-03A-002LT)

000202

#11 A

16AU87 11:30 EARL GAUTSCHE

- SHIP (13) PC LH 14026585
  (3) PC RH 14026586 (FIGURES REVISED 12AU87)
- WILL BE ORDERED THRU WAREHOUSING WITH A P.O.
  (AGREED TO DO THIS PER SD REQUEST, ORIGINAL DIRECTION FROM MG 07AU87).

12AU87 8:11 EARL GAUTSCHE

- KNOWN AREAS WITH COMPLAINTS:
  - SAN DIEGO SCHOOL DISTRICT (DESCRIBED)
  - GALIN TRANSPORTATION CO., STANHOPE N.J. -
    75 VEH. IN FLEET, 2 LHA'S CRACKED THIS YR
    6.2L DIESEL, G-30's
    VIN # 2GBGG35J7F4146006
    # 2GBGG35J3F4137519
    (VIN HISTORIES CLEAN)
    DAVE BRUCE RECD CALL YESTERDAY.
  - (UNKNOWN SOURCE) NORTH DAKOTA
    (1) LH G-30 CRACKED
    OTHER INFO NOT IMMEDIATELY AVAILABLE

000203

[redacted]

[redacted]

[redacted]

[redacted]

ILLEGIBLE

Truck & Bus Group

Truck & Bus Group
General Motors Corporation
31 Judson Street
Pontiac, Michigan 48058

October 12, 1987

Saginaw Division
General Motors Corporation
Detroit Gear & Axle
1840 Holbrook
Detroit, MI 48212

Attention: Dave Pokriefka
Chief Inspector

Subject: Lower Control Arm, P/N 15594133

Mr. Pokriefka:

Per our conversation of 1078/87, I am shipping to you one lower control arm (p/n 15594133) from a P-30 truck which had broken out at the ball stud hole. Information regarding the part is limited, except that it is from a vehicle operated by American Bakeries, (VIN: 1GDHP32J6F3508398; mileage: 56,746).

We would like you to examine the part and issue us a report detailing your findings and addressing possible cause(s) of breakage and parts conformance to specifications. The parts can be scrapped after your investigation is completed. If I can be of any additional assistance, please contact me (8-396-3438).

Thank-you,

Gary L. Haviland
Reliability Metallurgist
Special Analysis Group
8-396-3438
Reliability Laboratories
Truck & Bus Group
GENERAL MOTORS CORPORATION

/ncd

000205

glh10127

From the desk of

P.F. (Paul) Birsa

9-28-87

American Bakeries

1GDHP32I6F3508398

10-1-85 D.D

56,700 mi

PT #

15594133 Lower Control Arm

CRACKS AROUND BALL JOINT SEAT -

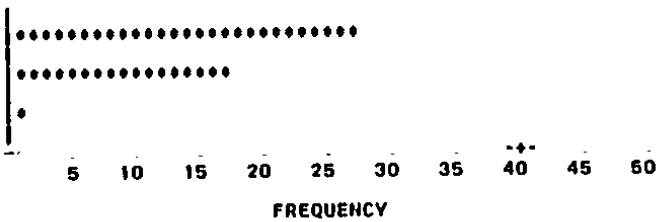
BALL JOINT SEPARATED FROM CONTROL ARM

illegible

000206

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
ALLEGED PROBLEM

FREQUENCY BAR CHART

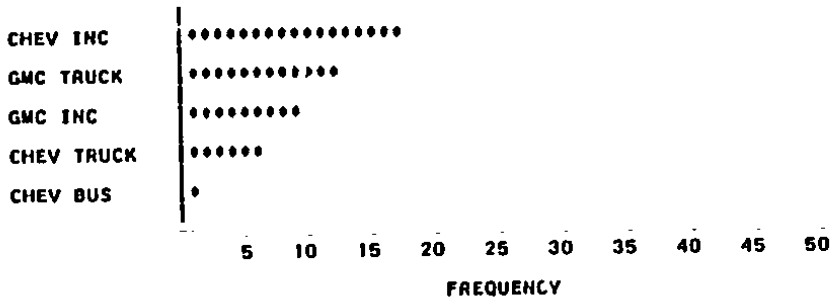


ALLEG	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
LEFT CNTL ARM	27	27	60.00	60.00
UNKNOWN	17	44	37.78	97.78
RIGHT CNTL ARM	1	45	2.22	100.00

000207

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
DIVISION

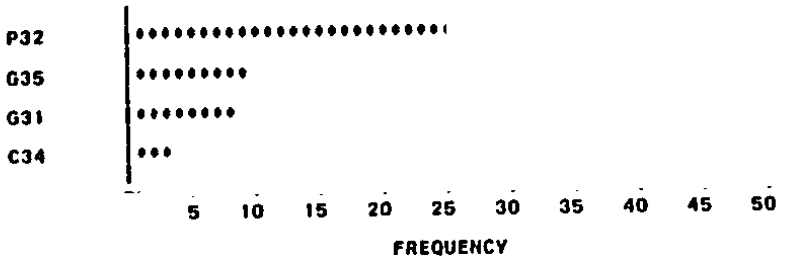
FREQUENCY BAR CHART



DIV	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
CHEV INC	17	17	37.78	37.78
GMC TRUCK	12	29	26.67	64.44
GMC INC	9	38	20.00	84.44
CHEV TRUCK	6	44	13.33	97.78
CHEV BUS	1	45	2.22	100.00

LOWER CONTI . ARM CRACKS
1984-87 30 SERIES TRUCKS
BSTYLE

FREQUENCY BAR CHART

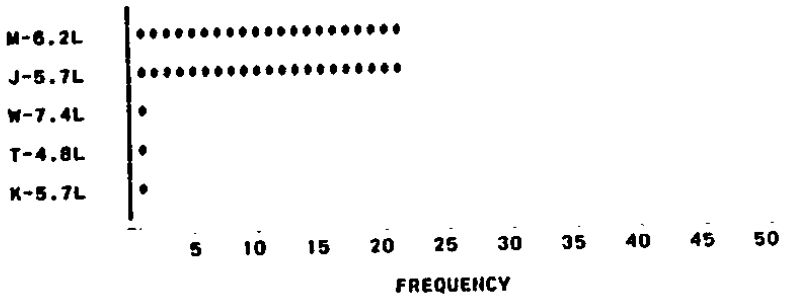


BSTYLE	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
P32	25	25	55.56	55.56
G35	9	34	20.00	75.56
G31	8	42	17.78	93.33
C34	3	45	6.67	100.00

000209

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
ENGINE

FREQUENCY BAR CHART

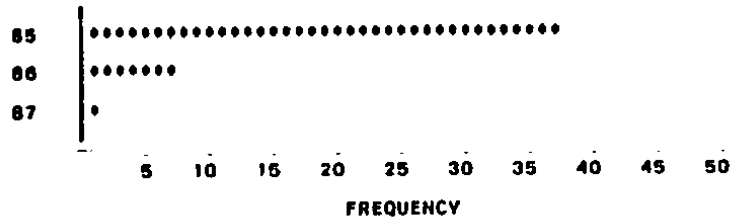


ENGINE	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
M-6.2L	21	21	46.67	46.67
J-5.7L	21	42	46.67	93.33
W-7.4L		43	2.22	95.56
T-4.8L	1	44	2.22	97.78
K-5.7L		45	2.22	100.00

000210

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
MODEL YEAR

FREQUENCY BAR CHART

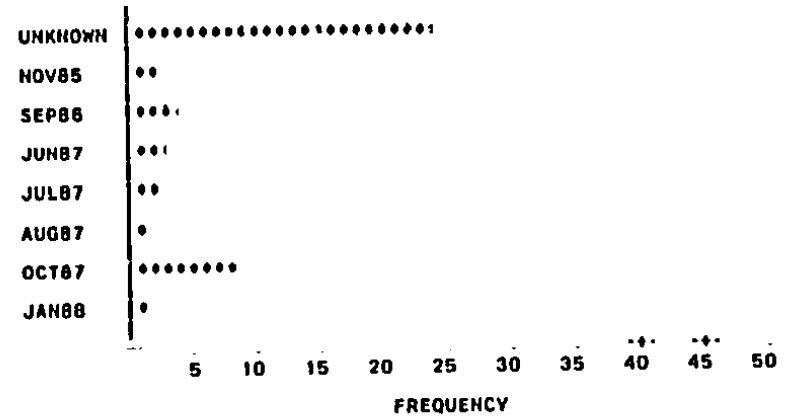


MY	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
85	37	37	82.22	82.22
86	7	44	15.56	97.78
87	1	45	2.22	100.00

000211

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
INCIDENT DATE

FREQUENCY BAR CHART

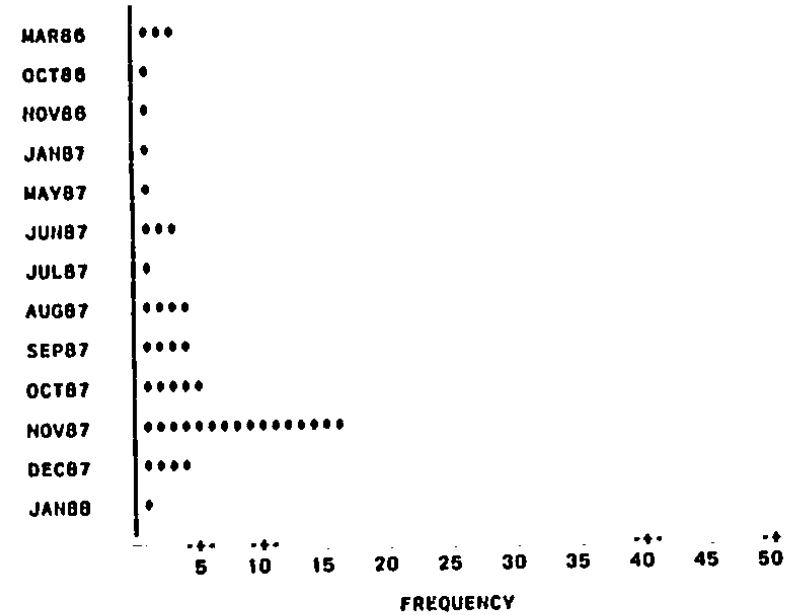


IDATEI	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
UNKNOWN	24	24	53.33	53.33
NOV85	2	26	4.44	57.78
SEP86	4	30	8.89	66.67
JUN87	3	33	6.67	73.33
JUL87	2	35	4.44	77.78
AUG87	1	36	2.22	80.00
OCT87	8	44	17.78	97.78
JAN88	1	45	2.22	100.00

000212

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
REPORT DATE

FREQUENCY BAR CHART

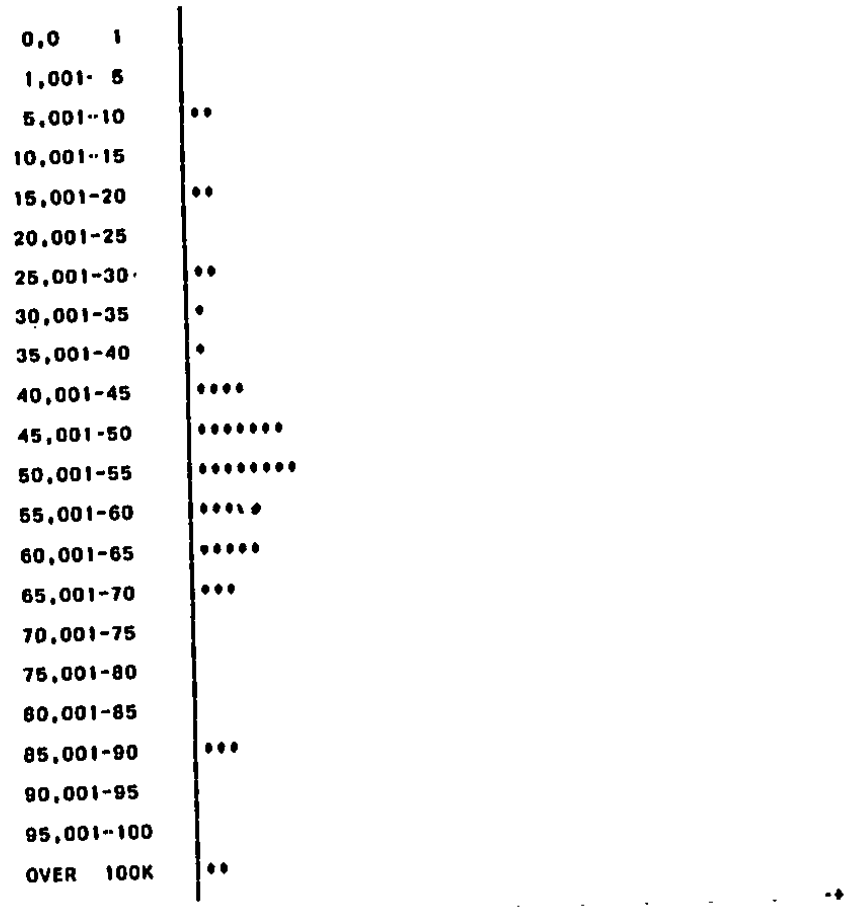


RDATE1	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
MAR86	3	3	6.67	6.67
OCT86		4	2.22	8.89
NOV86	1	5	2.22	11.11
JAN87	1	6	2.22	13.33
MAY87	1	7	2.22	15.56
JUN87	3	10	6.67	22.22
JUL87	1	11	2.22	24.44
AUG87	4	15	8.89	33.33
SEP87	4	19	8.89	42.22
OCT87	5	24	11.11	53.33
NOV87	16	40	35.56	88.89
DEC87	4	44	8.89	97.78
JAN88	1	45	2.22	100.00

000213

LOWER CONTROL ARM CRACKS
1984-87 30 SERIES TRUCKS
MILEAGE AT INCIDENT

FREQUENCY BAR CHART



MILES3	FREQ	CUM. FREQ	PERCENT	CUM. PERCENT
0,0 1	0	0	0.00	0.00
1,001- 5	0	0	0.00	0.00
5,001-10	2	2	4.44	4.44
10,001-15	0	2	0.00	4.44
15,001-20	2	4	4.44	8.89
20,001-25	0	4	0.00	8.89
25,001-30	2	6	4.44	13.33
30,001-35	1	7	2.22	15.56
35,001-40	1	8	2.22	17.78
40,001-45	4	12	8.89	26.67
45,001-50	7	19	15.56	42.22
50,001-55	8	27	17.78	60.00
55,001-60	5	32	11.11	71.11
60,001-65	5	37	11.11	82.22
65,001-70	3	40	6.67	88.89
70,001-75	0	40	0.00	88.89
75,001-80	0	40	0.00	88.89
80,001-85	0	40	0.00	88.89
85,001-90	3	43	6.67	95.56
90,001-95	0	43	0.00	95.56
95,001-100	0	43	0.00	95.56
OVER 100K	2	45	4.44	100.00

000214

ATTACHMENT "J"

ATTACHMENT "J"

#6

Saginaw

Inter-Organizational

Subject: FLEET SERVICE PRODUCT REPORT 0325JRW

Corrected letter

Date: 11-2-87

From: D.H. Pokriefka

To: R.H. Meinhardt

FINK BAKERY

3/4 Ton Lower Control Arm

#1 Left Hand

CROSS SHAFT BUSIHING TORQUE: 300 Ft Lbs
250 Ft Lbs
Spec 125 min.

SHAFT MOVEMENT: Free

JOUNCE BUMPER: Missing

Brackets: Shock Bracket-OK
Jounce Bracket repaired hand weld and heavy crash thru witness marks.

BUSHINGS: Seated

BALL STUD: Present "0" pushout load.

TEARDOWN INSPECTION: Arm stamping is cracked from outer wall end face to the ball stud mounting hole. Stamping source is SKD (SEE LAB REPORT #6-39)

3/4 Ton Lower Control Arm
#2 Left Hand

CROSS SHAFT BUSHING TORQUE: 200 Ft Lbs
150 Ft Lbs
Spec 125 min

SHAFT MOVEMENT: Free

JOUNCE BUMPER: Missing

BRACKETS: Shock Bracket OK
Jounce Bracket missing welds did pull metal

BUSHINGS: Seated

BALL STUD: Missing

TEARDOWN INSPECTION: Same as # 1

000217

#6A

FLEET SERVICE PRODUCT REPORT 0325JRW
July 9, 1986 continued

3/4 Ton Lower Control Arm
3 Left Hand

CROSS SHAFT BUSHING TORQUE 250 Ft Lbs
200 Ft Lbs
Spec 125 min.

SHAFT MOVEMENT: Free

JOUNCE BUMPER: Compressed

BRACKETS: Shock Brkt OK

BUSHING: Seated

BALL STUD: Present "0" pushout load

TEARDOWN INSPECTION: Same as # 1

SUMMARY: The lower control arm stamping from SKD Company appears to have a small radius at the transition of the side wall to the ball stud nose. Current stampings also have a small radius in the same area. SKD has changed the trim to increase the radius to 1 inch and provide additional strength in the ball stud area (See Sample)

In addition the customer may be using the front suspensions at max or beyond max load range which is evidenced by broken welds and compressed jounce bumpers. Suggest a heavier rated front suspension be used (14032908 H-22) that has reinforcements at all critical points.

Correction: Additional inspection and dimensional checks have revealed that the stampings are from SKD. D.H.P. 11-2-87

D. H. Pokriefka
Chief Inspector. Plant # 56

OUC 21P

Current Product Engineering
General Motors Corporation

March 31, 1988 GM-278A

Mr. Michael B. Brownlee
Director
Office of Defects Investigation Enforcement
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

NEF-121rpb
EA88-007

Dear Mr. Brownlee:

This letter will supplement our January 29, 1988 response to EA88-007 pertaining to cracks in lower control arms of certain Chevrolet and GMC 30 Series trucks.

In our response to EA88-007, we advised you that an investigation to determine actual vehicle loads, use history and modifications, if any, in the field was in progress. This data was needed to further identify the causal and contributory factors which have produced lower control arm cracks and to assess the risk to motor vehicle safety created by those factors. Further, we advised that we would inform the NHTSA as to the results of our investigation upon completion of this effort.

To date our investigation of the field incidents for P-30 vehicles equipped with gasoline or diesel engines and for G-30 vehicles equipped with diesel engines has been completed. The results of this part of our investigation have been referred to the appropriate Product Problem Evaluation Committee (PPEC) for their consideration and recommendation. A PPEC recommendation would then be forwarded to management for their consideration. We will advise you as to the results of this review which we expect to be completed by the end of May

Concurrently, the investigation of G-30 vehicles equipped with gasoline engines and the investigation of C-30 and R-30 vehicles is still in process. We will further advise NHTSA as to the results of this continuing investigation.

Our investigation to date has not identified any additional accidents or injuries subsequent to those identified in our response to EA88-007

Sincerely,

C. Thomas Terry
Manager
Product Investigations

000219

305943

INFLUENCED RECALL CAMPAIGNS

NAME OF MANUFACTURER: GENERAL MOTORS CORP

RECALL CAMPAIGN NUMBER: 88V-110

ACTION THAT INFLUENCED RECALL:

PE: _____

EA: 88-007

CASE: _____

CIR: _____

OTHER: _____

C00220

RECEIVED

1988 JUL -6 PM 4:18

U.S. DOT

Current Product Engineering

General Motors Corporation

July 6, 1988

88V-110(01)

Mr. Michael B. Brownlee
Director
Office of Defects Investigation Enforcement
National Highway Traffic Safety Administration
Washington, D.C. 20590

Dear Mr. Brownlee:

The following information is submitted pursuant to the requirements of 49 CFR 573.5 as it applies to a determination by General Motors of a defect related to motor vehicle safety involving certain 1985 and 1986 "G-30" and "P-30" light duty truck models.

573.5(c)(1). GM Truck & Bus and Chevrolet Motor Divisions of General Motors Corporation.

573.5(c)(2)(3)(4). This information is shown on the attached sheet.

573.5(c)(5). General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-86 P3 and G3 model trucks. The left-hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

573.5(c)(6). The first field report was received by General Motors in March 1986. Control arms used in production were revised in July 1986. An investigation to review the condition of vehicles produced before that date was initiated in October 1987.

573.5(c)(8). This information is set forth in the dealer bulletin.

573.5(c)(9). Representative copies of the owner notification letter and dealer bulletin are attached.

Very truly yours,

C. Thomas Terry
Manager
Product Investigations

attachment
CAMP.20/cm

000221

573.5(c)(2),(3),(4)

VEHICLES POTENTIALLY AFFECTED BY MAKE, MODEL, AND MODEL YEAR PLUS INCLUSIVE DATES OF MANUFACTURE

MAKE	MODEL SERIES	MODEL YEAR	NUMBER INVOLVED	INCLUSIVE MANUFACTURING DATES (FROM)	(TO)	DESCRIPTIVE INFO. TO PROPERLY IDENT. VEH.	EST. NO. W/CONDITION
GMC	P3__	1985	2,702	08/84	10/85		Unknown*
	G3	1985	242	09/84	07/85		
GMC	P3__	1986	1,318	10/85	08/86		
	G3	1986	613	08/85	07/86		
		GMC Total	4,875				
Chev.	P3__	1985	8,071	08/84	10/85		
	G3	1985	412	08/84	08/85		
Chev.	P3__	1986	5,223	10/85	08/86		
	G3	1986	2,904	08/85	07/86		
		Chev. Total	16,610				
		GM TOTAL	21,485				

* All affected vehicles will be corrected

000222

88V-110 (02)

88V-110 (03)

Dear General Motors Truck Owner:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-1986 P3 and G3 model trucks. The left hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

To prevent this condition from occuring it will be necessary to repair or replace the lower left control arm on your vehicle. This service will be completed for you at no charge.

Instructions for performing this service have been sent to your GMC truck dealer. Please contact your dealer to arrange a service date. The labor time necessary to perform this correction will be approximately one hour. Please ask your dealer how much additional time will be needed to process your vehicle. Parts will be available approximately _____ 1988.

Your GMC Truck dealer is best equipped to obtain parts and provide service to ensure your vehicle is inspected and/or corrected as promptly as possible. However, if you take your vehicle to your dealer on the agreed service date and they do not service this condition on that date or within five days, we recommend you contact your nearest GMC Truck Zone Office by telephone. The Zone Office will assist you and your dealer in getting your vehicle serviced. The locations and telephone numbers of GMC Truck Zone Offices have been attached for your convenience.

After contacting your dealer and the Zone Office, if you are still not satisfied that we have done our best to remedy this condition without charge within a reasonable time, you may wish to write the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street S.W. Washington, D.C. 20590, or call 800-424-9393 (Washington, D.C. residents use 366-0123).

The enclosed owner reply card identifies your vehicle. Presentation of this card to your dealer will assist making the necessary correction to your vehicle in the shortest possible time. If you have sold or traded your vehicle please let us know by completing the postage paid owner reply card and returning it to us.

We are sorry to cause you this inconvenience, however we have taken this action in the best of your safety and continued satisfaction with our products.

000223

GMC TRUCK DIVISION
GENERAL MOTORS CORPORATION

88V-110 (04)

NUMBER:
GROUP: 3C Front Suspension

DATE: ____ 1988

SUBJECT: LH Lower Control Arm Cracking

MODELS: 1985-86 P3 Model Trucks with Gas and Diesel Engines and G3 Vans with 6.2 L Diesel Engines (LL4)

The National Traffic and Motor Vehicle Safety Act, as amended, provides that each vehicle which is subject to a recall campaign of this type must be adequately repaired within a reasonable time after the owner has tendered it for repair. A failure to adequately repair within 60 days after tender of a vehicle is prima facie evidence of failure to repair within a reasonable time.

If the condition is not adequately repaired within a reasonable time, the owner may be entitled to an identical or reasonably equivalent vehicle at no charge, or to a refund of the purchase price less a reasonable allowance for depreciation.

To avoid having to provide these burdensome solutions, every effort must be made to promptly schedule appointments with owners and to repair their vehicles as soon as possible. As you will see in reading the attached copy of the letter which is being sent to owners, the owner is being instructed to contact the nearest GMC Zone Office if the dealer does not remedy the condition within five days of the mutually agreed upon service date. If the condition is not remedied within a reasonable time, they are instructed how to contact the National Highway Traffic Safety Administration.

DEFECT INVOLVED

General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-86 P3 and G3 model trucks. The left-hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

To prevent this condition from occurring, we will inspect your left-hand lower control arm

88V-110 (05)

VEHICLES INVOLVED

Involved are certain P3 model trucks with gas and diesel engines and G3 vans equipped with 6.2 L Diesel engines (RPO LL4) only built within the following VIN breakpoints:

MODEL YEAR	MODEL	ASSEMBLY PLANT	FROM	THROUGH
1985	P3	Detroit	F3500001	F3510494
	G3	Scarborough	F4500663	F4525796
1986	P3	Detroit	G3500001	G3504509
	G3	Scarborough	G4500456	G4529600

The specific vehicles involved in this campaign have been identified by Vehicle Identification Number Computer Listings. These listings are furnished to all involved dealers with the campaign bulletin.

DEALER CAMPAIGN RESPONSIBILITY

Dealers are to perform the required service described under Service Procedure for all vehicles subject to this campaign at no charge to owners regardless of mileage, age of vehicle, or ownership, from this time forward.

Whenever a vehicle subject to this campaign is taken into your new or used vehicle inventory, or it is in your dealership for service in the future, you should take the steps necessary to ensure the campaign correction has been made before reselling or releasing the vehicle.

Owners of vehicles recently sold from your new vehicle inventory are to be contacted by the dealer and arrangements made to make the required correction according to instructions contained in this bulletin.

If no owner's name and address were available to GMC Truck Division at the time of campaign initiation, the dealer will determine the owner's name and address from the dealership sales records. Please provide this information directly on the second copy of the listing next to the applicable VIN so that our records may be updated and the appropriate notification mailed to the owner. This second copy should then be submitted to the address listed below in the previously supplied yellow campaign envelopes.

GMC Truck Division
General Motors Corporation
101 Union Street
Plymouth Michigan 48170

000225

88V-110 (06)

OWNER NOTIFICATION

Owners will be notified on this campaign on their vehicles by GMC Truck Division (see copy of owner letter included with this bulletin). A listing of owner names and addresses has been furnished to the involved dealer to enable dealers to follow up with owners involved in this campaign. This listing may contain owner names and addresses obtained from state motor vehicle registration records. The use of such motor vehicle registration data for any other purpose is a violation of law in several states. Accordingly, you are urged to limit the use of this listing to this campaign.

SERVICE INFORMATION

G3,P3 LOWER CONTROL ARM REPLACEMENT

TOOLS REQUIRED:
J 23028-02 Spring Remover and Installer
J 23742 Ball Joint Remover

REMOVAL

1. Remove 2/3 of the brake fluid from the master cylinder.
2. Raise the vehicle and support it with suitable safety stands.
3. Mark the relationship of the wheel to the hub.
4. Remove the wheel and tire assembly.
5. Remove the brake caliper. Position a C-clamp around the outer pad and caliper. Tighten the C-clamp until the piston bottoms in its bore (figure 1) Remove the caliper mounting bolts (figure 2) Lift out the caliper. Suspend the caliper so that the flexible hose is not strained (figure 3)
6. Disconnect the shock absorber at the lower end and move it aside (figure 4)
7. Remove the stabilizer bar retaining nuts,bolts, and clamps at the lower control arm (figure 5)
8. Remove the stabilizer bar from the lower control arm.
9. Remove the grease fittings from the ends of the pivot bar.
10. Secure J 23028-02 to a suitable floor jack.

CAUTION: Failure to secure J 23028-02 to a suitable floor jack could result in personal injury.

000226

11. Place J 23028-02 under the lower control arm shaft (figure 6)

12. Install a chain around the coil spring and through the lower control arm as a safety precaution.

13. Raise the jack to remove the tension from the lower control arm shaft.

14. Remove the U-bolt's retaining nuts and washers.

15. Remove the U-bolts.

16. Lower the control arm by slowly releasing the jack until the spring can be removed.

17. Remove the spring and the safety chain only after all compression force has been removed from the spring.

18. Continue to support the inboard end of the lower control arm with a jack and J 23028-02.

19. Remove the lower ball joint cotter pin. Throw it away.

20. Loosen the lower ball joint retaining nut one turn.

21. Install J 23742, with the large cup end over the upper ball joint retaining nut (figure 7)

22. Extend the threaded end of J 23742 until the lower ball joint stud loosens from the steering knuckle.

23. Remove J 23742.

24. Remove the nut.

25. Remove the lower control arm assembly.

26. Remove the rubber bumper from the lower control arm.
    On G van models the bumper is retained by a "tree' The bumper is pried free.
    On P models the bumper is retained by a nut. Remove the nut and then remove the bumper.

INSTALLATION

1. Install the lower control arm ball joint stud into the steering knuckle.

2. Install the balljoint retaining nut on the stud. Snug the nut down but do not tighten.

88V-110 (08)

3. Secure J 23028-02 to a suitable floor jack.

CAUTION: Failure to secure J 23028-02 to a suitable floor jack could result in personal injury.

4. Support the inboard end of the lower control arm with J 23028-02.

5. Install the spring on the lower control arm. Secure the spring to the lower control arm with a chain.

6. Position the spring on its mount.

7. Slowly raise the lower control arm into position.

8. Line up the front indexing hole in the pivot shaft with the crossmember attaching stud (figure 8)

9. Install the U-bolts, washers, and nuts.

10. Tighten the U-bolt nuts to 115 N·m (85 ft.lbs.)

11. Tighten the ball joint nut to 122 N·m (90 ft.lbs.)

12. Install the new cotter pin in the ball joint stud. The nut may be tightened to a maximum of 176 N·m (130 ft.lbs.) in order to align the cotter pin holes.

13. Lower the floor jack and remove J 23028-02.

14. Install the stabilizer bar to the lower control arm.

15. Install the stabilizer bracket,bolts, washers and nuts.

16. Tighten the nuts to 33 N·m (24 ft.lbs.)

17 Install the lower end of the shock absorber to the lower control arm.

18. Install the bolt, washer, and nut.

19. For the G3 vehicle, tighten the nut to 103 N·m (80 ft.lbs.)
For the P3 vehicle, tighten the nut to 80 N·m (59 ft.lbs.)

20. Remove the caliper from its hanger.

21. Install the caliper assembly on the brake.

22. Install the caliper support bolts. Tighten the bolts to 50 N·m (37 ft.lbs.)

23. Install the wheel and tire. Make sure the alignment marks match.

88V-110 (09)

24. Install the wheel nuts.

25. Tighten the nuts to 160 N·m (120 ft.lbs.)

26. Lower the vehicle.

27. Pump the brake pedal several times to make sure that the brake pedal is firm before moving the vehicle.

28. Check the brake fluid level in the master cylinder and fill to the proper level.

PARTS INFORMATION

Parts are to be obtained from General Motors Service Parts Operation (GMSPO) To ensure that these parts will be obtained as soon as possible, they should be ordered from GMSPO on a C.I.O. order with no special instruction code, but order on an advise code (2)

PART NUMBER	DESCRIPTION	QUANTITY
15594133	LH Lower Control Arm Assembly P3 Model with ROS dual rear wheels	1
14026581	LH Lower Control Arm Assembly P3 Model without ROS dual rear wheel	1
14026585	LH Lower Control Arm Assembly G3 Van Model	1

WARRANTY INFORMATION

Dealers should submit a warranty claim on each vehicle completed under this campaign.

LABOR OPERATION NUMBER	DESCRIPTION	*TIME ALLOWANCE	TROUBLE CODE
V 4720	Replace Lower Left Control Arm	0.9 Hr	96

*For dealer to receive Additional Time Allowance associated with this campaign add 0.1 hour to the Labor Operation Time Allowance.

000229

88V-110 (10)

CAMPAIGN IDENTIFICATION LABEL

Each vehicle corrected in accordance with the instructions outlined in this product campaign bulletin will require a 'Campaign Identification Label. Each label provides a space to include the five (5) digit dealer code of the dealer performing the campaign service. The information can be inserted with a typewriter or ballpoint pen.

Each 'Campaign Identification Label' is to be located on the radiator core support in an area which will be visible when the vehicle is brought in for periodic servicing by the owner.

Apply 'Campaign Identification Label' only on a clean dry surface.

ADMINISTRATIVE PROCEDURE

Procedures covering this campaign are outlined in Section V of your dealership's 'GMC Truck Claims Processing Manual #P 8719.

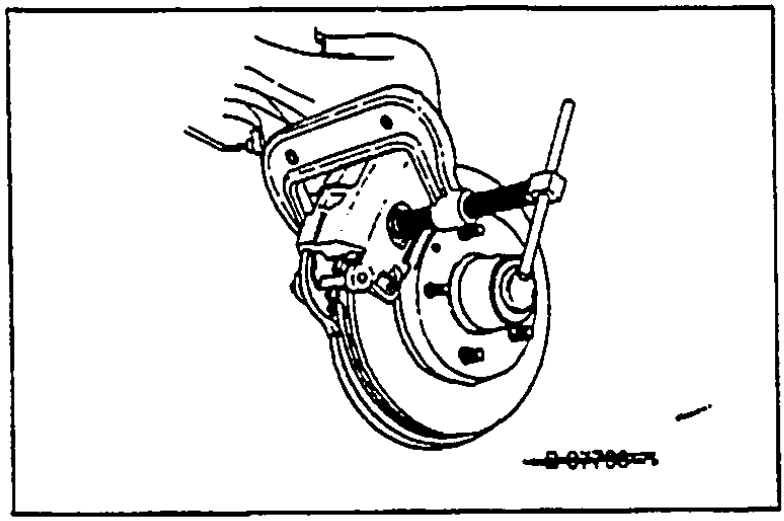
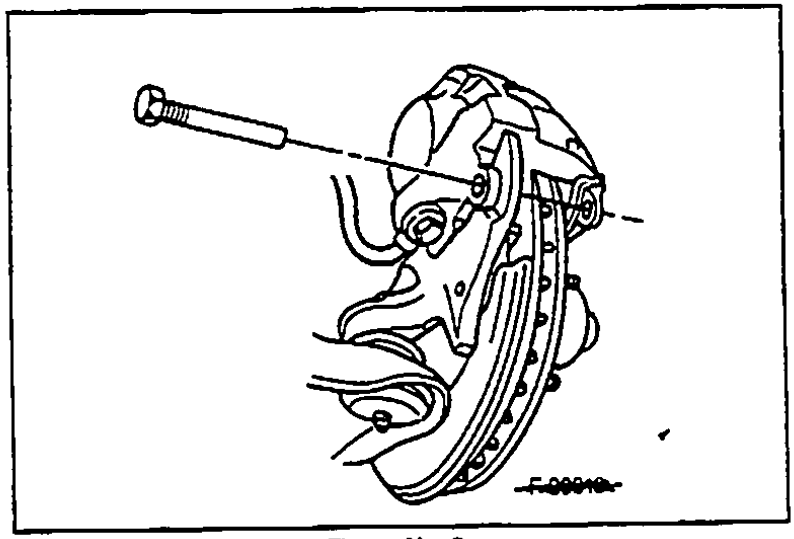


Figure No. 1



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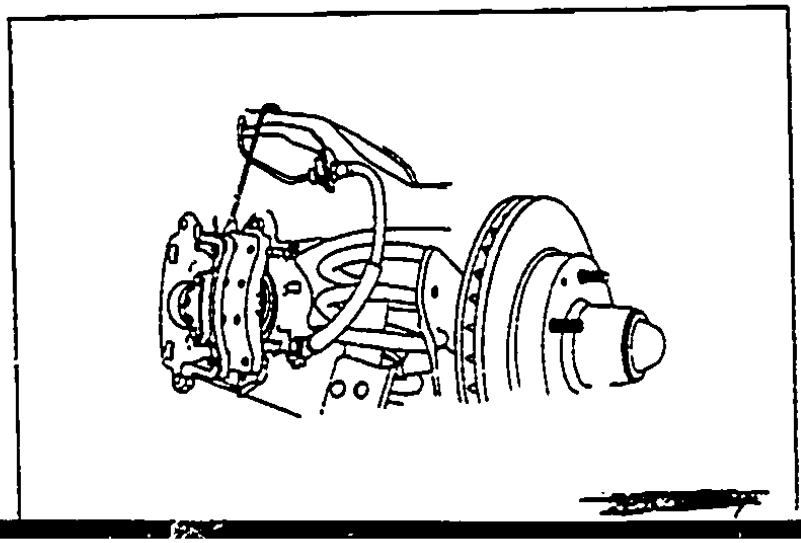
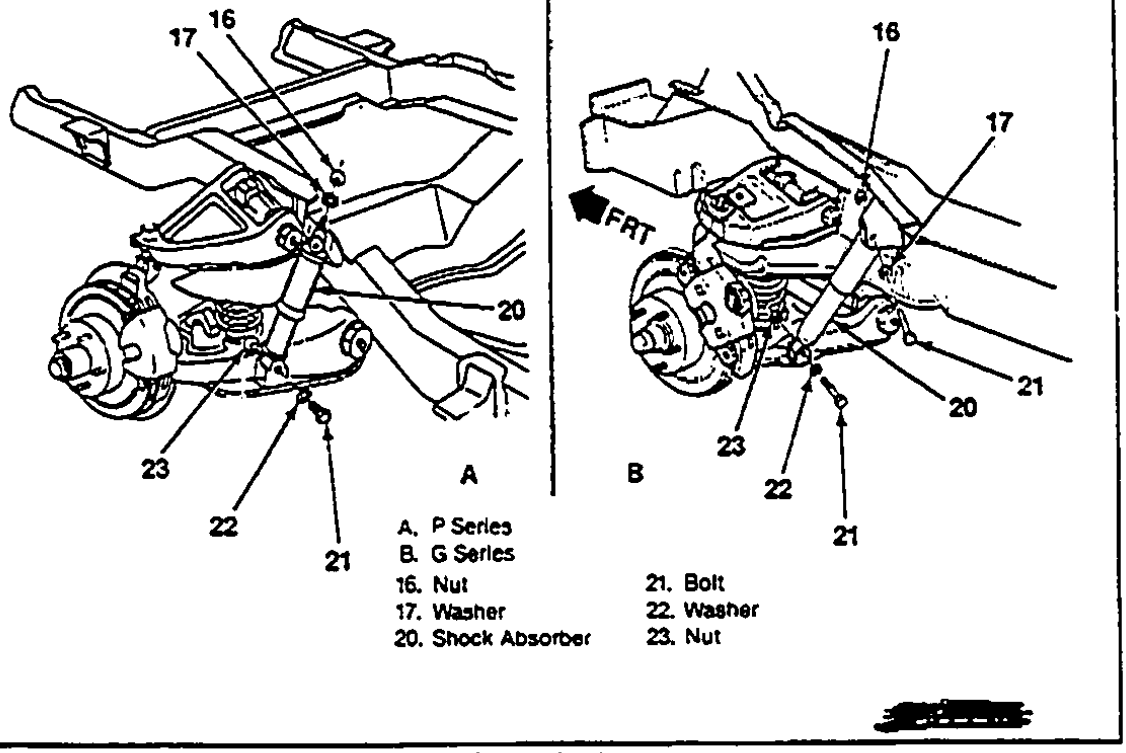
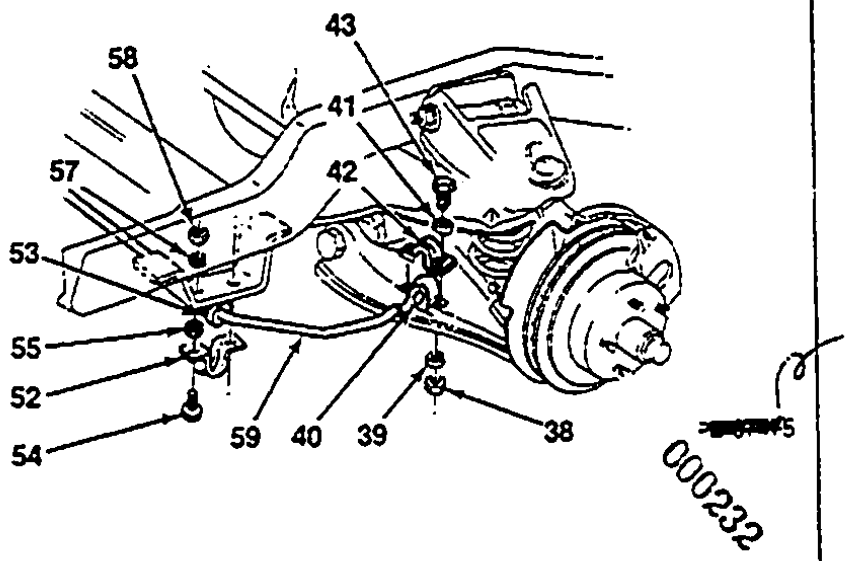




A. P Series
B. G Series
16. Nut
17. Washer
20. Shock Absorber
21. Bolt
22. Washer
23. Nut

Figure No. 4

38. Nut
39. Washer
40. Bushing
41. Washer
42. Clamp
43. Bolt
52. Clamp
53. Bushing
54. Bolt
55. Washer
57. Washer
58. Nut
59. Stabilizer Bar



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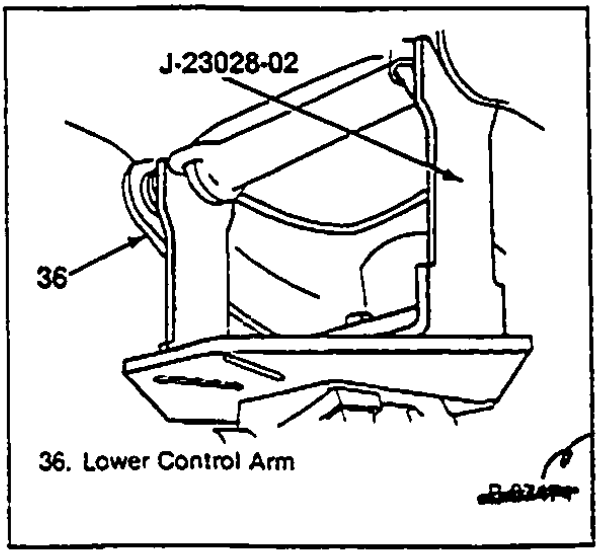


Figure No. 6

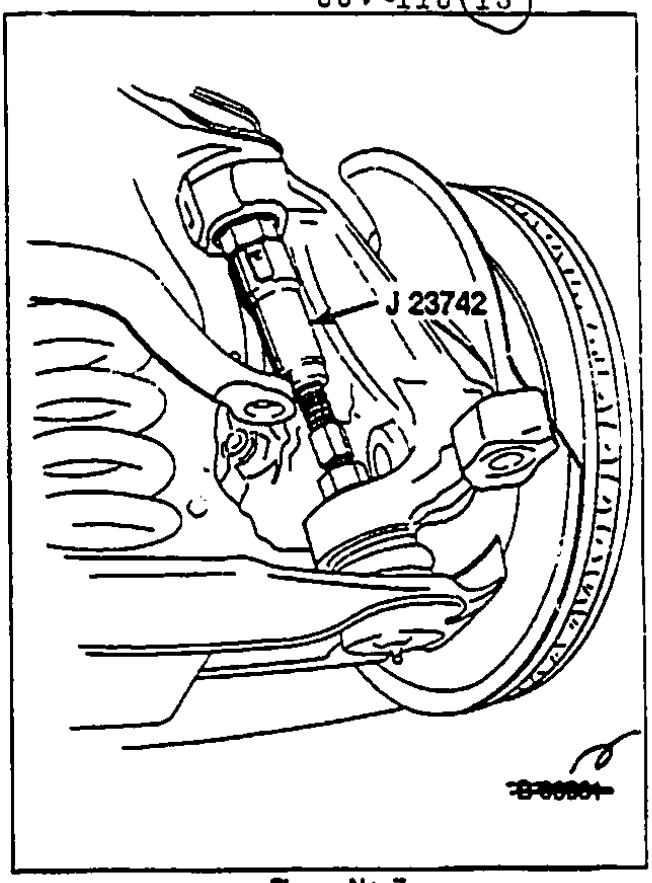
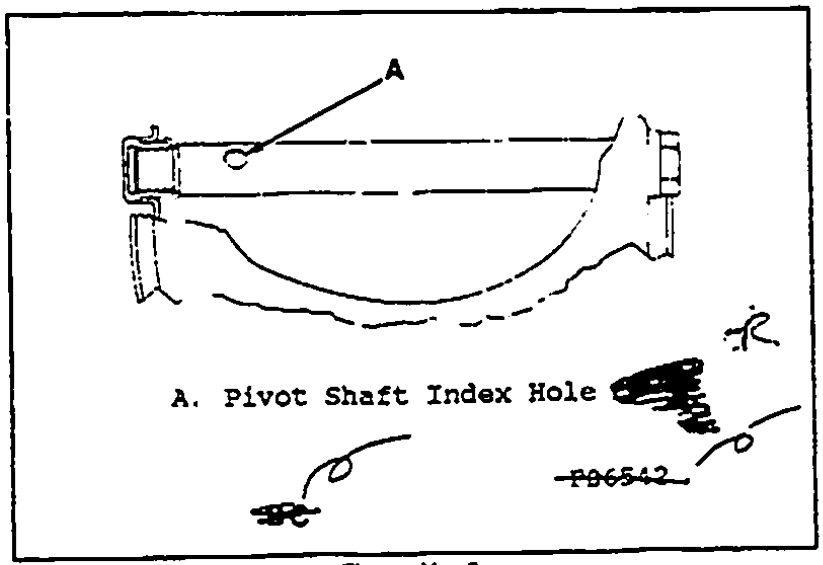


Figure No. 7



000233

Figure No. 8

JUL 21 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. C. Thomas Terry
Manager, Product Investigations
General Motors Technical Center
30200 Mound Road
Warren, MI 48090-9010

NEF-121rpb
EA88-007

Dear Mr. Terry:

This refers to your defect report of July 6, 1988, concerning left lower control arms cracking on 1985 and 1986 "G-30" and "P-30" light trucks.

For purposes of this information request, definitions of subject vehicles, General Motors (GM), and alleged defect remain the same as stated in our letter of November 19, 1987, concerning this subject.

In order for my staff to complete their evaluation of the alleged defect, additional information is required. Pursuant to Sections 108 and 112 of the National Traffic and Motor Vehicle Safety Act (the Act), please provide numbered responses to the following items. Please repeat each item verbatim before the response. If any information has been provided to this office in response to a previous information request on this matter, that information need not be resubmitted. All other information must be submitted as requested. The submitted information is to include, but not be limited to, all written reports or documents; transcriptions, notes, or other documentation of oral communications; and information contained on electronic storage media. If you cannot answer any specific question, please state the reason.

1 Identify the number of vehicles GM has sold by make, model, and model year, and built with the irregularly formed control arms described in Response 4 of your October 22, 1987 letter to this office (GM278), which concerns the alleged defect.

2. Explain GM's rationale for recalling some, but not all vehicles equipped with the irregularly formed control arms referenced in Question 1.

3. GM's response to Question 21 of the National Highway Traffic Safety Administration (NHTSA) November 19, 1987 Information Request on this subject was incomplete. Therefore, furnish GM's opinion of the alleged defect in the subject vehicles. Please include an assessment of the following:

   a. the causal or contributory factors which may result in the alleged defect;
   b. the failure mode;
   c. the risk to motor vehicle safety created by the alleged defect; and
   d. any warning of the alleged defect.

4. GM's letter of March 31, 1988, to NHTSA stated the investigation of G-30 vehicles equipped with gasoline engines and the investigation of C-30 and R-30 vehicles is still in process. Identify the current status of this investigation, the results and recommendations, or projected date of completion, if still ongoing.

5. Furnish a copy of all documents not specifically requested which GM believes are relevant or were used in formulating its assessment of the alleged defect.

6. Furnish any new information of which GM is aware concerning any report, document, or information which may have been previously provided by GM. Also, furnish any additional information of which GM is aware concerning the reports provided by NHTSA on this matter.

It is important that GM respond to this letter on time. This letter is being sent pursuant to Section 112 of the Act, which authorizes this agency to conduct any investigation which may be necessary to enforce Title I of the Act. Your failure to respond promptly and fully to this letter may be construed as a violation of Section 108(a)(1)(B) of the Act.

Your written response, in triplicate, referencing the identification codes in the upper right hand corner of page 1 of this letter, must be submitted to this office within 25 working days from your receipt of this letter. If you find that you cannot respond within the allotted time with all the requested information, you must request an extension from the Director, Office of Defects Investigation, no later than 5 working days prior to the due date for your response. A telephone request for an extension may be made to the Director at (202) 366-2850, but it must be confirmed in writing. On-time delivery of partial submissions should be made when circumstances prevent meeting the required delivery schedule.

If any portion of your response is considered confidential information, include all such material in a separate enclosure marked confidential. In addition, you must submit a copy of all such confidential material directly to the Chief Counsel of NHTSA and comply with all other requirements of 49 CFR Part 512, Confidential Business Information.

If you have any technical questions concerning this matter, please contact Mr. Richard Boyd of my staff at (202) 366-5194.

Sincerely,

Original signed by
James P. Talentino

Michael B. Brownlee, Director
Office of Defects Investigation
Enforcement

JUL 22 1988

Mr. Dan Hargraves
Assistant Supervisor Fleet Maintenance
San Diego Unified School District
Fleet Maintenance
1826 Irving Avenue
San Diego, CA 92113

NEF-121rpb
EA88-007

Dear Mr. Hargraves:

This refers to your letter of August 7, 1987, concerning lower control arms cracking on your G-30 school buses. As you are aware, we have been conducting an Engineering Analysis on this matter with General Motors (GM). On July 6, 1988, they notified us that a safety recall would be conducted on 1985 through 1986 P3 model trucks with gas and diesel engines, and G3 vans with 6.2 diesel engines. A copy of GM's correspondence has been included for your information. Although the investigation is still ongoing for other models and engine combinations, it appears that vehicles in your fleet are covered by the safety recall mentioned above.

We wish to thank you for notifying us of this matter and providing the necessary information needed to pursue the investigation. Should you have any questions concerning this issue or any other safety related matter, please contact Mr. Richard Boyd of my staff at (202) 366-5194.

Sincerely,

H. N. Linsen

for Michael B. Brownlee, Director
Office of Defects Investigation
Enforcement

Enclosure

006237

RECEIVED

1988 JUL -6 PM 4: 18

Current Product Engineering

General Motors Corporation

July 6, 1988

Mr. Michael B. Brownlee
Director
Office of Defects Investigation Enforcement
National Highway Traffic Safety Administration
Washington, D.C. 20590

Dear Mr. Brownlee:

The following information is submitted pursuant to the requirements of 49 CFR 573.5 as it applies to a determination by General Motors of a defect related to motor vehicle safety involving certain 1985 and 1986 "G-30" and "P-30" light duty truck models.

573.5(c)(1). GM Truck & Bus and Chevrolet Motor Divisions of General Motors Corporation.

573.5(c)(2)(3)(4). This information is shown on the attached sheet.

573.5(c)(5). General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-86 P3 and G3 model trucks. The left-hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

573.5(c)(6). The first field report was received by General Motors in March 1986. Control arms used in production were revised in July 1986. An investigation to review the condition of vehicles produced before that date was initiated in October 1987.

573.5(c)(8). This information is set forth in the dealer bulletin.

573.5(c)(9). Representative copies of the owner notification letter and dealer bulletin are attached.

Very truly yours,

C. Thomas Terry
Manager
Product Investigations

000238

573.5(c)(2),(3),(4)

VEHICLES POTENTIALLY AFFECTED BY MAKE, MODEL, AND MODEL YEAR
PLUS INCLUSIVE DATES OF MANUFACTURE

MAKE	MODEL SERIES	MODEL YEAR	NUMBER INVOLVED	INCLUSIVE MANUFACTURING DATES (FROM)	(TO)	DESCRIPTIVE INFO. TO PROPERLY IDENT. VEH.	EST. NO. W/CONDITION
GMC	P3__	1985	2,702	08/84	10/85		Unknown*
	G3	1985	242	09/84	07/85		
GMC	P3__	1986	1,318	10/85	08/86		
	G3	1986	613	08/85	07/86		
		GMC Total	4,875				
Chev.	P3__	1985	8,071	08/84	10/85		
	G3	1985	412	08/84	08/85		
Chev.	P3__	1986	5,223	10/85	08/86		
	G3	1986	2,904	08/85	07/86		
		Chev. Total	16,610				
		GM TOTAL	21,485				

* All affected vehicles will be corrected

Dear General Motors Truck Owner:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-1986 P3 and G3 model trucks. The left hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

To prevent this condition from occuring it will be necessary to repair or replace the lower left control arm on your vehicle. This service will be completed for you at no charge.

Instructions for performing this service have been sent to your GMC truck dealer. Please contact your dealer to arrange a service date. The labor time necessary to perform this correction will be approximately one hour. Please ask your dealer how much additional time will be needed to process your vehicle. Parts will be available approximately _____ 1988.

Your GMC Truck dealer is best equipped to obtain parts and provide service to ensure your vehicle is inspected and/or corrected as promptly as possible. However, if you take your vehicle to your dealer on the agreed service date and they do not service this condition on that date or within five days, we recommend you contact your nearest GMC Truck Zone Office by telephone. The Zone Office will assist you and your dealer in getting your vehicle serviced. The locations and telephone numbers of GMC Truck Zone Offices have been attached for your convenience.

After contacting your dealer and the Zone Office, if you are still not satisfied that we have done our best to remedy this condition without charge within a reasonable time, you may wish to write the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street S.W. Washington, D.C. 20590, or call 800-424-9393 (Washington, D.C. residents use 366-0123).

The enclosed owner reply card identifies your vehicle. Presentation of this card to your dealer will assist making the necessary correction to your vehicle in the shortest possible time. If you have sold or traded your vehicle, please let us know by completing the postage paid owner reply card and returning it to us.

We are sorry to cause you this inconvenience; however, we have taken this action in the interest of your safety and continued satisfaction with our products.

000240

GMC TRUCK DIVISION
GENERAL MOTORS CORPORATION

NUMBER:
GROUP: 3C Front Suspension

DATE: -- 1988

SUBJECT: LH Lower Control Arm Cracking

MODELS: 1985-86 P3 Model Trucks with Gas and Diesel Engines and G3 Vans with 6.2 L Diesel Engines (LL4)

The National Traffic and Motor Vehicle Safety Act, as amended, provides that each vehicle which is subject to a recall campaign of this type must be adequately repaired within a reasonable time after the owner has tendered it for repair. A failure to adequately repair within 60 days after tender of a vehicle is prima facie evidence of failure to repair within a reasonable time.

If the condition is not adequately repaired within a reasonable time, the owner may be entitled to an identical or reasonably equivalent vehicle at no charge, or to a refund of the purchase price less a reasonable allowance for depreciation.

To avoid having to provide these burdensome solutions, every effort must be made to promptly schedule appointments with owners and to repair their vehicles as soon as possible. As you will see in reading the attached copy of the letter which is being sent to owners, the owner is being instructed to contact the nearest GMC Zone Office if the dealer does not remedy the condition within five days of the mutually agreed upon service date. If the condition is not remedied within a reasonable time, they are instructed how to contact the National Highway Traffic Safety Administration.

DEFECT INVOLVED

General Motors has determined that a defect which relates to motor vehicle safety exists in some 1985-86 P3 and G3 model trucks. The left-hand lower control arm can crack starting at the rear flange and progress to the ball joint mounting hole and eventually cause the lower ball joint to separate from the control arm. If this happens, a loss of vehicle steering control can occur which could result in a vehicle crash without prior warning.

To prevent this condition from occurring at this time, it will be necessary to install a new left-hand lower control arm on all involved vehicles.

GOL241

VEHICLES INVOLVED

Involved are certain P3 model trucks with gas and diesel engines and G3 vans equipped with 6.2 L Diesel engines (RPO LL4) only built within the following VIN breakpoints:

MODEL YEAR	MODEL	ASSEMBLY PLANT	FROM	THROUGH
1985	P3	Detroit	F3500001	F3510494
	G3	Scarborough	F4500663	F4525796
1986	P3	Detroit	G3500001	G3504509
	G3	Scarborough	G4500456	G4529600

The specific vehicles involved in this campaign have been identified by Vehicle Identification Number Computer Listings. These listings are furnished to all involved dealers with the campaign bulletin.

DEALER CAMPAIGN RESPONSIBILITY

Dealers are to perform the required service described under Service Procedure for all vehicles subject to this campaign at no charge to owners, regardless of mileage, age of vehicle, or ownership, from this time forward.

Whenever a vehicle subject to this campaign is taken into your new or used vehicle inventory, or it is in your dealership for service in the future, you should take the steps necessary to ensure the campaign correction has been made before reselling or releasing the vehicle.

Owners of vehicles recently sold from your new vehicle inventory are to be contacted by the dealer and arrangements made to make the required correction according to instructions contained in this bulletin.

If no owner's name and address were available to GMC Truck Division at the time of campaign initiation, the dealer will determine the owner's name and address from the dealership sales records. Please provide this information directly on the second copy of the listing next to the applicable VIN so that our records may be updated and the appropriate notification mailed to the owner. This second copy should then be submitted to the address listed below in the previously supplied yellow campaign envelopes.

GMC Truck Division
General Motors Corporation
101 Union Street
Plymouth, Michigan 48170

OWNER NOTIFICATION

Owners will be notified of this campaign on their vehicles by GMC Truck Division (see copy of owner letter included with this bulletin). A listing of owner names and addresses has been furnished to the involved dealers to enable dealers to follow up with owners involved in this campaign. This listing may contain owner names and addresses obtained from state motor vehicle registration records. The use of such motor vehicle registration data for any other purpose is a violation of law in several states. Accordingly, you are urged to limit the use of this listing to this campaign.

SERVICE INFORMATION

G3,P3 LOWER CONTROL ARM REPLACEMENT

TOOLS REQUIRED:
J 23028-02 Spring Remover and Installer
J 23742 Ball Joint Remover

REMOVAL

1. Remove 2/3 of the brake fluid from the master cylinder.
2. Raise the vehicle and support it with suitable safety stands.
3. Mark the relationship of the wheel to the hub.
4. Remove the wheel and tire assembly.
5. Remove the brake caliper. Position a C-clamp around the outer pad and caliper. Tighten the C-clamp until the piston bottoms in its bore (figure 1) Remove the caliper mounting bolts (figure 2) Lift out the caliper. Suspend the caliper so that the flexible hose is not strained (figure 3)
6. Disconnect the shock absorber at the lower end and move it aside (figure 4)
7. Remove the stabilizer bar retaining nuts,bolts, and clamps at the lower control arm (figure 5)
8. Remove the stabilizer bar from the lower control arm.
9. Remove the grease fittings from the ends of the pivot bar.
10. Secure J 23028-02 to a suitable floor jack.

CAUTION: Failure to secure J 23028-02 to a suitable floor jack could result in personal injury.

000243

11. Place J 23028-02 under the lower control arm shaft (figure 6)

12. Install a chain around the coil spring and through the lower control arm as a safety precaution.

13. Raise the jack to remove the tension from the lower control arm shaft.

14. Remove the U-bolt's retaining nuts and washers.

15. Remove the U-bolts.

16. Lower the control arm by slowly releasing the jack until the spring can be removed.

17. Remove the spring and the safety chain only after all compression force has been removed from the spring.

18. Continue to support the inboard end of the lower control arm with a jack and J 23028-02.

19. Remove the lower ball joint cotter pin. Throw it away.

20. Loosen the lower ball joint retaining nut one turn.

21. Install J 23742, with the large cup end over the upper ball joint retaining nut (figure 7)

22. Extend the threaded end of J 23742 until the lower ball joint stud loosens from the steering knuckle.

23. Remove J 23742.

24. Remove the nut.

25. Remove the lower control arm assembly.

26. Remove the rubber bumper from the lower control arm.
    On G van models the bumper is retained by a "tree". The bumper is pried free.
    On P models the bumper is retained by a nut. Remove the nut and then remove the bumper.

INSTALLATION

1. Install the lower control arm ball joint stud into the steering knuckle.

2. Install the balljoint retaining nut on the stud. Snug the nut down but do not tighten.

3. Secure J 23028-02 to a suitable floor jack.

CAUTION: Failure to secure J 23028-02 to a suitable floor jack could result in personal injury.

4. Support the inboard end of the lower control arm with J 23028-02.

5. Install the spring on the lower control arm. Secure the spring to the lower control arm with a chain.

6. Position the spring on its mount.

7. Slowly raise the lower control arm into position.

8. Line up the front indexing hole in the pivot shaft with the crossmember attaching stud (figure 8)

9. Install the U-bolts, washers, and nuts.

10. Tighten the U-bolt nuts to 115 N·m (85 ft.lbs.)

11. Tighten the ball joint nut to 122 N·m (90 ft.lbs.)

12. Install the new cotter pin in the ball joint stud. The nut may be tightened to a maximum of 176 N·m (130 ft.lbs.) in order to align the cotter pin holes.

13. Lower the floor jack and remove J 23028-02.

14. Install the stabilizer bar to the lower control arm.

15. Install the stabilizer bracket,bolts, washers and nuts.

16. Tighten the nuts to 33 N·m (24 ft.lbs.)

17. Install the lower end of the shock absorber to the lower control arm.

18. Install the bolt, washer, and nut.

19. For the G3 vehicle, tighten the nut to 103 N·m (80 ft.lbs.)
For the P3 vehicle, tighten the nut to 80 N·m (59 ft.lbs.)

20. Remove the caliper from its hanger.

21. Install the caliper assembly on the brake.

22. Install the caliper support bolts. Tighten the bolts to 50 N·m (37 ft.lbs.)

23. Install the wheel and tire. Make sure the alignment marks match.

COL245

24. Install the wheel nuts.

25. Tighten the nuts to 160 N·m (120 ft. lbs.)

26. Lower the vehicle.

27. Pump the brake pedal several times to make sure that the brake pedal is firm before moving the vehicle.

28. Check the brake fluid level in the master cylinder and fill to the proper level.

PARTS INFORMATION

Parts are to be obtained from General Motors Service Parts Operation (GMSPO). To ensure that these parts will be obtained as soon as possible, they should be ordered from GMSPO on a C.I.O. order with no special instruction code, but order on an advise code (2)

PART NUMBER	DESCRIPTION	QUANTITY
15594133	LH Lower Control Arm Assembly P3 model with ROS dual rear wheels	1
14026581	LH Lower Control Arm Assembly P3 model without ROS dual rear wheels	1
14026585	LH Lower Control Arm Assembly G3 Van model	1

WARRANTY INFORMATION

Dealers should submit a warranty claim on each vehicle completed under this campaign.

LABOR OPERATION NUMBER	DESCRIPTION	*TIME ALLOWANCE	TROUBLE CODE
V 4720	Replace Lower Left Control Arm	0.7 Hr.	96

*For dealer to receive Administrative Time Allowance associated with this campaign, add 0.1 hour to the Labor Operation Time Allowance.

00C246

CAMPAIGN IDENTIFICATION LABEL

Each vehicle corrected in accordance with the instructions outlined in this product campaign bulletin will require a 'Campaign Identification Label'. Each label provides a space to include the five (5) digit dealer code of the dealer performing the campaign service. This information may be inserted with a typewriter or ball point pen.

Each 'Campaign Identification Label' is to be located on the radiator core support in an area which will be visible when the vehicle is brought in for periodic servicing by the owner.

Apply 'Campaign Identification Label' only on a clean dry surface.

ADMINISTRATIVE PROCEDURE

Procedures covering this campaign are outlined in Section V of your dealership 'GMC Truck Claims Processing Manual' #P 8719.

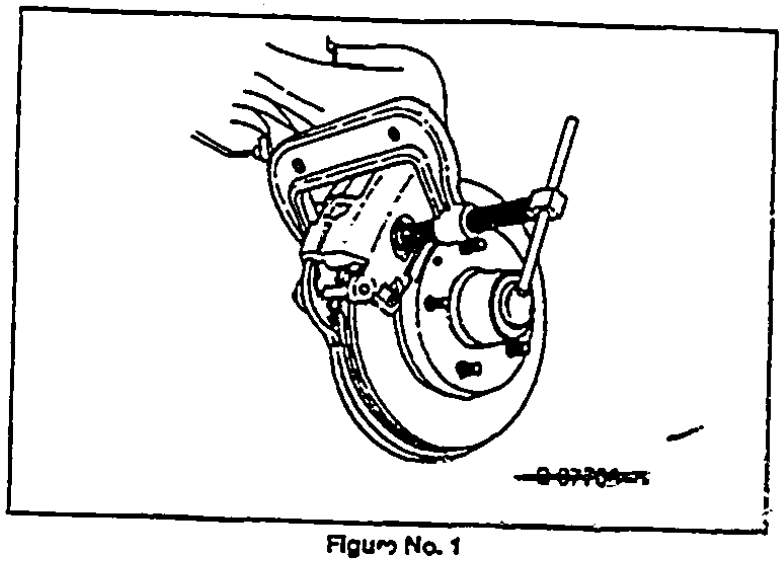


Figure No. 1

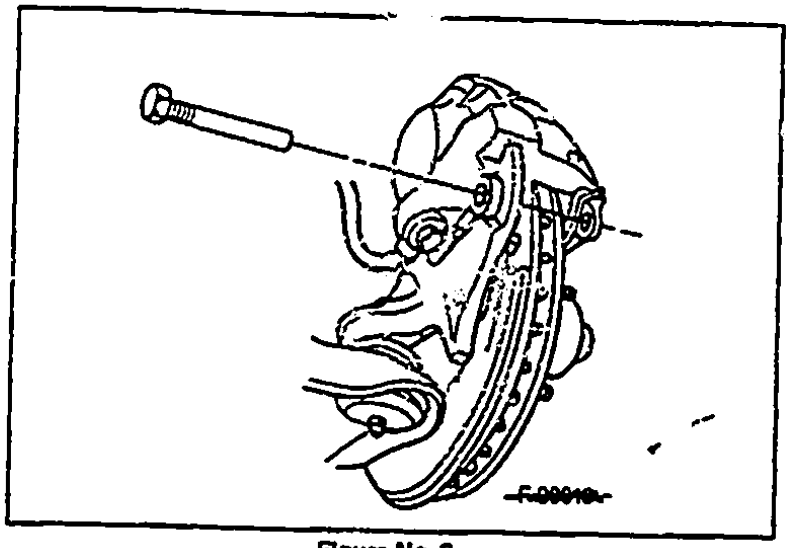
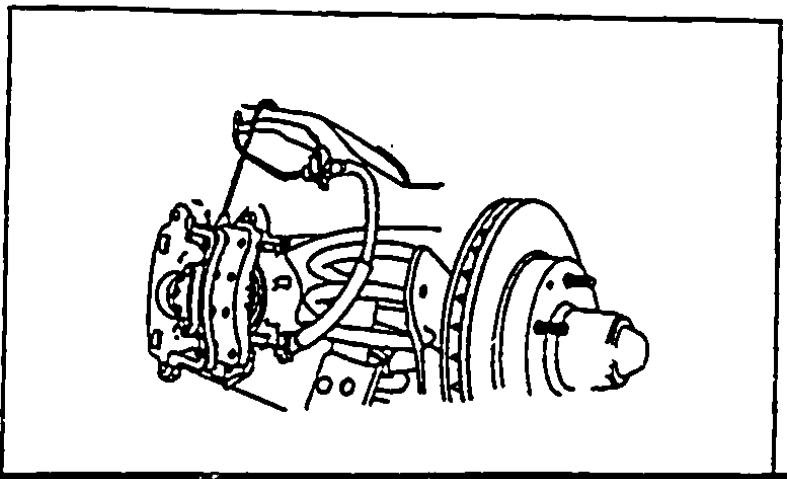


Figure No. 2



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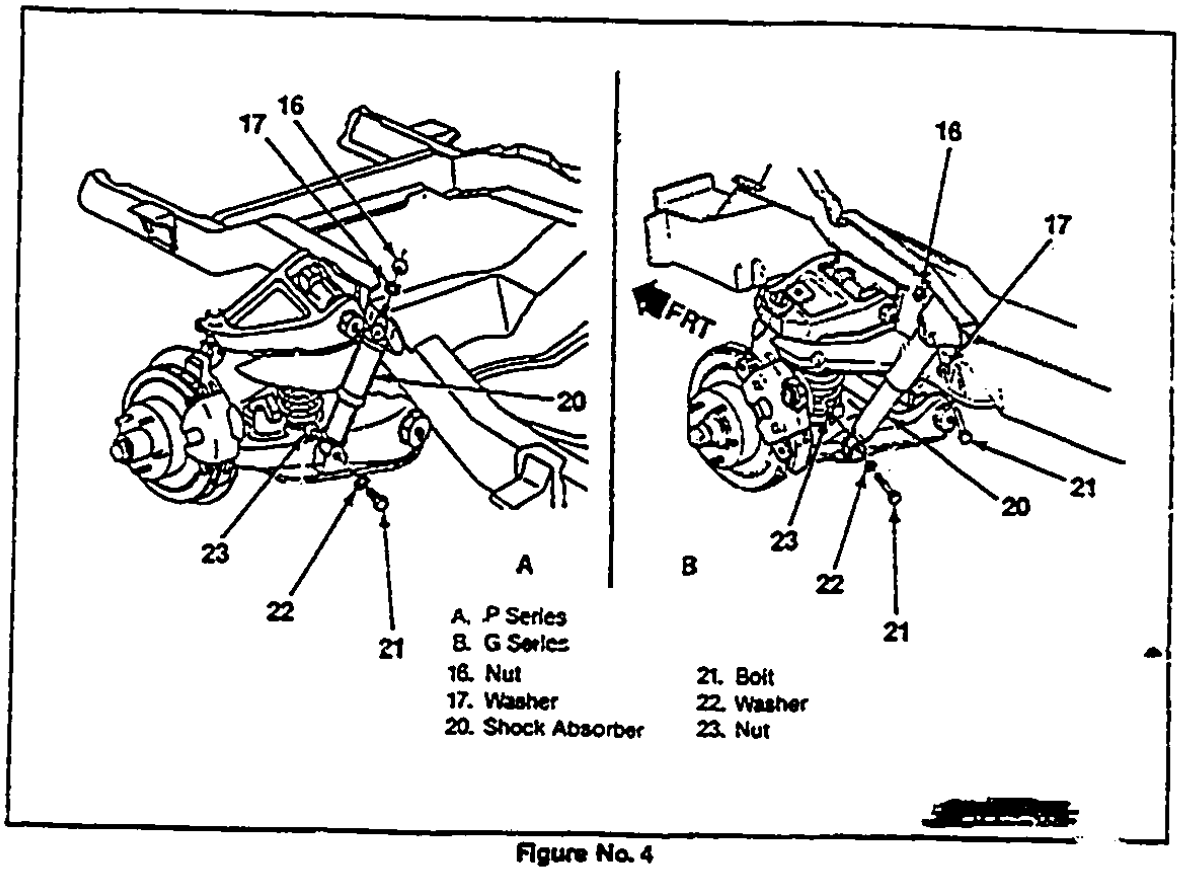
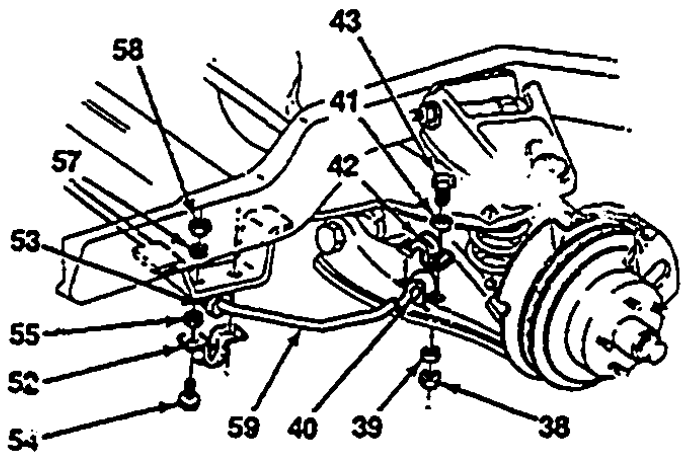


A. P Series
B. G Series
16. Nut
17. Washer
20. Shock Absorber
21. Bolt
22. Washer
23. Nut

Figure No. 4

38. Nut
39. Washer
40. Bushing
41. Washer
42. Clamp
43. Bolt
52. Clamp
53. Bushing
54. Bolt
55. Washer
57. Washer
58. Nut
59. Stabilizer Bar



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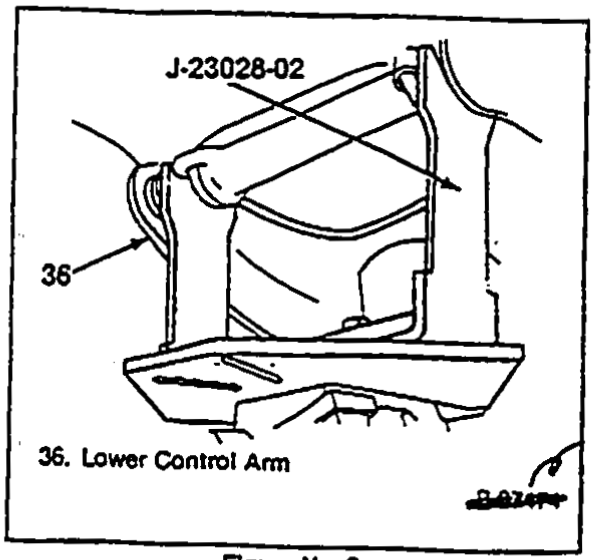

Figure No. 6

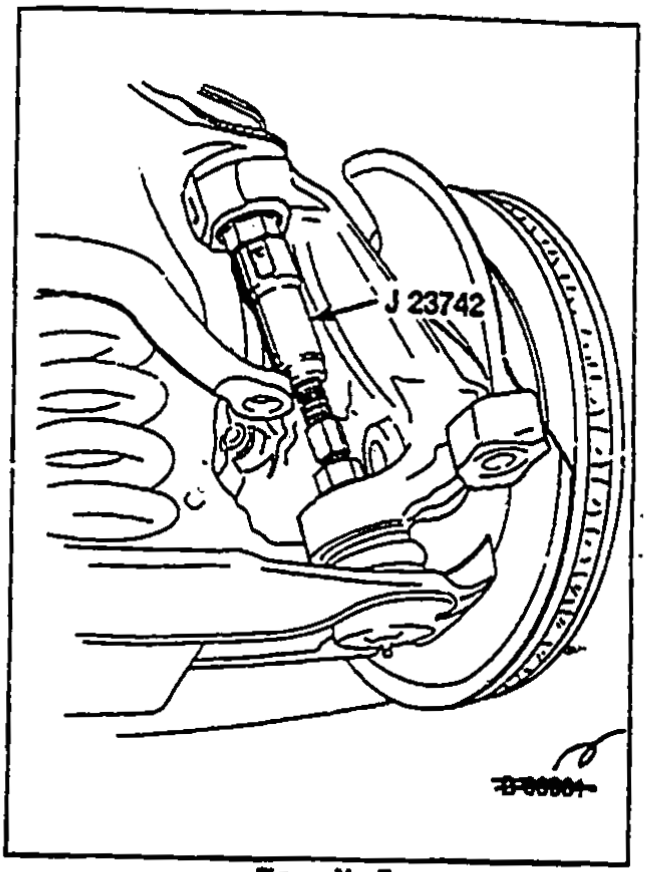

Figure No. 7

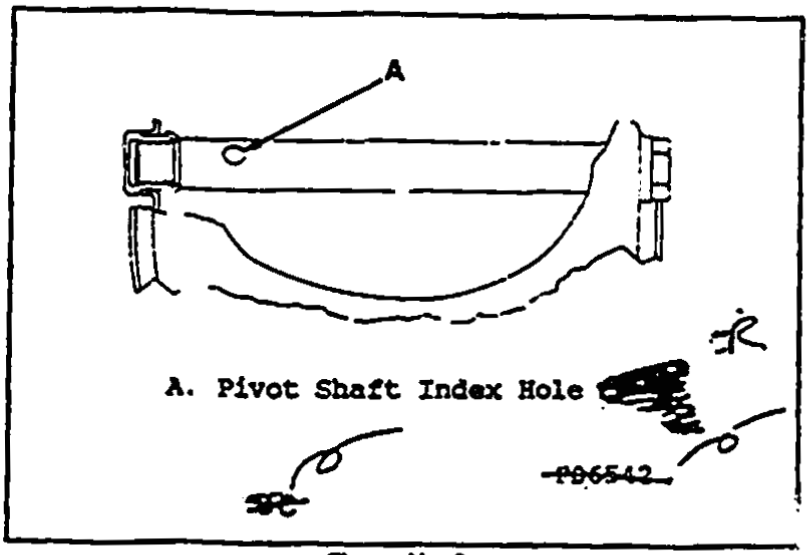

Figure No. 8